

VTM

Digital Master controller with adjustable Vac limits for three-phase asynchronous fan motors

AC AC fans

Three-phase

M Master



VTM is a digital controller designed for **proportional** speed control of **high-slip** three-phase **asynchronous motors** used on **axial, radial or centrifugal fans** in HVAC&R and **industrial applications**. The control principle is based on **mains-balanced phase-cut control**, enabling **precise** and **efficient** speed control while reducing **electrical** and **mechanical wear** of the motors.

Available in **8 A, 12 A** and **20 A** versions, VTM operates in **Master mode** and integrates a **proportional control** system, with native support for **Copeland Digital Scroll** control, making it particularly suitable for **advanced cooling systems**.

The device features **one configurable analogue input**, compatible with **4–20 mA pressure transducers**, **0–5 Vdc** signals, **0–10 Vdc** signals or **NTC probes** with a **+10°C to +60°C** scale, enabling **precise adaptation** to system **operating conditions**.

For **auxiliary management**, VTM provides **three programmable on/off contacts** for **remote Start/Stop**, **TK thermal protection** and forcing the speed to a configured **maximum value** or to **100%**, ensuring **responsiveness** even under **critical operating conditions**. The controller also includes a **configurable relay** for **alarm signalling**.

Control parameters include **setpoint**, **proportional band**, **minimum speed** and **maximum speed**, providing **application flexibility** and adaptation to the **thermal profiles** required by modern **fan-assisted heat exchangers**.

Protected against **mains overvoltage** and disturbances on the **control inputs**, VTM is available in an **IP20** version for **panel mounting** and an **IP55** version for **direct installation** in **harsh environments**. It is the ideal solution for **ventilation control** in **dry coolers, condensers** and **industrial HVAC&R systems**.

Rated current (RMS)

at 50 °C ambient temperature

8A

12A

20A

Supply voltage

Available options:

400 Vac

± 10%

460 Vac

± 10%

230 Vac

± 10%

50/60 Hz:

Automatic

Control principle



Phase-cut control

Three-phase phase-cut control, mains-synchronised and line-balanced

Inputs

1

Input

For sensors and control signals

One configurable analogue input, compatible with **4–20 mA pressure transducers**, **0–5 Vdc signals**, **0–10 Vdc signals** or **NTC probes** with a **+10°C to +60°C** scale, enabling **precise adaptation** to system **operating conditions**.

4-20 mA

0-5 V

0-10 V

NTC

Control system



Proportional Master



Copeland digital scroll

Setpoint

1

Setpoint

Control parameters include **setpoint**, **proportional band**, **minimum speed** and **maximum speed**, providing **application flexibility** and adaptation to the **thermal profiles** required by modern **fan-assisted heat exchangers**.

Operating parameters:

Setpoint

Proportional band

Cut/Off min

Min speed limit

Max speed limit

Digital inputs

3

Inputs

On/Off

Three programmable on/off contacts, for remote Start/Stop, TK thermal protection and forcing the speed to a configured maximum value or to 100%.

Remote Start/Stop

Motor thermal contacts (TK)

Max 100%

Digital outputs

1 Output Relay

The controller is equipped with a relay for alarm management.

Technical specifications

Control input types	4–20 mA transducer, 0–5 Vdc transducer, NTC probe (+10/+60 °C)
Number of motor connection outputs	1-4
Interface	Analogue
Electrical protections	<ul style="list-style-type: none">• Control input protection• Mains overvoltage protection
Protection ratings	IP55 IP20 (on request)
Applicable earthing systems	Full compliance with international earthing standards IT / TT / TN
Operating temperature	-20°C / 50°C
Weight (kg)	<ul style="list-style-type: none">• 8A 2,3 kg• 12A 2,5 kg• 20A 3,8 kg
Dimensions H × W × D (mm)	<ul style="list-style-type: none">• 8A 254 x 235 x 114• 12A 254 x 230 x 128• 20A 254 x 230 x 158



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